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Appl. No. 10/035,567  
Resp. dated Oct. 3, 2005  
In Reply to Office Action of May 3, 2005

under M.P.E.P. § 2143.01 (“[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious”).

In addition, the dependent claims recite elements which are patentable independent of the elements recited in claim 1. Some examples are recited herein; however, the arguments or the claims highlighted herein should not be considered exhaustive.

Claim 2 recites, in part, wherein the output symbol is of a first value when the sample sum corresponding to the identified maximum is positive and is otherwise of a second value. The difference E-L is a continuous difference or at least has more than just a first value and a second value. Accordingly, the timing offset estimate is not of a first value when the sample sum is positive and is otherwise of a second value.

Claim 3 has been amended to overcome the claim objection as set forth in the Office Action. As amended, claim 3 recites a particular mathematical relation with particular indices for a first sample sum, a second sample sum and a third sample sum. The Office Action alleges that the mathematical relations are inherent to every accumulator. Applicant respectfully challenges such an assertion. For something to be inherent, it must always be true, not merely possibly true or probably true. Every accumulator does not use the particular mathematical relation as set forth in claim 3. Applicant respectfully submits that the Examiner should provide support in Giallorenzi or Chalmers to teach each and every element as set forth in claim 3.

Claim 6 recites, in part, wherein a standard next symbol time is plus n samples and adjusting the next symbol timing to be plus n+1 samples. Applicant respectfully requests that the subsequent Office Action provide citations to Giallorenzi or Chalmers that teach each and every element as set forth in claim 6.

It is therefore respectfully requested that the obviousness rejection be withdrawn with respect to claim 1 and its rejected dependent claims (i.e., claims 2, 3, 5, 6 and 11).

#### Claims 19-21

Since claims 19-21 recite the same or similar elements as set forth in claims 1-3, 5, 6 and

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11, Applicant respectfully makes the same or similar arguments, if appropriate, with respect to claims 19-21 as have been made with respect to claims 1-3, 5, 6 and 11.

#### **IV. OBVIOUSNESS REJECTION OF CLAIMS 7-9 AND 22-24**

Claims 7-9 and 22-24 stand rejected under 35 U.S.C. § 103(a) as being obvious over Giallorenzi in view of Chalmers, and further in view of United States Patent No. 5,629,960 ("Dutkiewicz"). Applicant respectfully traverses the rejection as set forth below.

Applicant respectfully submits that Dutkiewicz has been improperly combined with Giallorenzi and Chalmers. M.P.E.P. § 2145(X)(D)(2) states that "[i]t is improper to combine references where the references teach away from their combination".

Col. 2, lines 20 and 21 of Chalmers states that "DC offsets are also a concern and should be removed prior to demodulation." The Office Action at page 4 states this is a motivation for combining Giallorenzi and Chalmers: "[a]s also discussed in column 2 lines 19-25, because DC offsets are a concern and should be removed prior to demodulation, one of ordinary skill in the art at the time of the invention would have been motivated that Giallorenzi et al. receiver can be modified to remove the DC offsets before the demodulation step as taught in Chalmers invention."

On the other hand, Dutkiewicz teaches away from the teachings of Chalmers and the motivation for combining Giallorenzi and Chalmers as set forth in the Office Action. With reference to the cited FIG. 3, "[d]etector 20 recovers/detects the encoded information signal transmitted on forward channel 12 and outputs (on line 30) a demodulated analog signal corresponding to the original information signal." Col. 3, lines 27-30 of Dutkiewicz. The demodulated output of detector 20 is upstream of A/D converter 21 which is, in turn, upstream of DC Off-Set Removal 22. See, e.g., FIG. 3 of Dutkiewicz. Thus, Dutkiewicz teaches away from Chalmers and the motivation for combining Giallorenzi and Chalmers as set forth in the Office Action because Dutkiewicz teaches removing DC offsets *after* demodulating the signal. By requiring the removal of DC offsets before demodulating the signal, Chalmers and the

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motivation for combining Giallorenzi and Chalmers as set forth in the Office Action teach away from Dutkiewicz.

For at least the above reasons, it is believed that an obviousness rejection based on the combination of Giallorenzi, Chalmers and Dutkiewicz cannot be maintained since Giallorenzi and Chalmers were improperly combined with Dutkiewicz.

According to the Office Action at page 4, "[i]n column 9, lines 15-25, Chalmers teaches that any DC offset in the signal prior to A/D downconversion would be shifted into the stop band of the polyphase filter by the digital downconverters 510 512 and effectively removed". Applicant respectfully requests that the Examiner provide further justification for combining Chalmers and Dutkiewicz. In other words, if the Chalmers invention effectively removes any DC offset as alleged in the Office Action, then why add on extra DC offset circuitry as set forth in Dutkiewicz?

It is therefore respectfully requested that the obviousness rejection be withdrawn with respect to claims 7-9 and 22-24.

**V. OBVIOUSNESS REJECTION OF CLAIMS 10 AND 25**

Claims 10 and 25 stand rejected under 35 U.S.C. § 103(a) as being obvious over Giallorenzi in view of Chalmers, further in view of Dutkiewicz, and still further in view of United States Patent No. 6,370,205 B1 ("Lindoff"). Applicant respectfully traverses the rejection as set forth below.

Applicant make the same arguments here with respect to the improper combination of Giallorenzi, Chalmers and Dutkiewicz. It is respectfully submitted that an obviousness rejection cannot be maintained when based on an improper combination.

Furthermore, Lindoff also teaches away from Chalmers and the motivation for combining Giallorenzi and Chalmers as set forth in the Office Action since Lindoff teaches compensating for DC offset *after* A/D converters 150, 180 in signal processor 190. The DC compensating apparatus illustrated in FIG. 2 of Lindoff is inside the signal processor 190 which is after the A/D

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converters 150, 180. Thus, Lindoff and Chalmers teach away from each other; Lindoff and the motivation for combining Giallorenzi and Chalmers teach away from each other.

For at least the above reasons, an obviousness rejection cannot be maintained when based on an improper combination such as Giallorenzi, Chalmers and Lindoff.

It is respectfully requested that the obviousness rejection be withdrawn with respect to claims 10 and 25.

#### **VI. OBVIOUSNESS REJECTION OF CLAIMS 12-18 AND 26-28**

Claims 12-18 and 26-28 stand rejected under 35 U.S.C. § 103(a) as being obvious over Giallorenzi in view of Dutkiewicz. Applicant respectfully traverses the rejection as set forth below.

##### **Claims 12-18**

Claim 12 recites, in part, "a maximum identifier coupled with each of the plurality of sample accumulators". In support of the rejection, the Office Action states at page 10 states, without any supporting evidence, that "[w]ithin a timing offset estimation, one of average skill in the art would have recognized the maximum output of the accumulators as claimed. The timing offset estimation corresponds to the claimed output to be generated according to the identified maximum output." Applicant respectfully challenges the above unsupported assertion and respectfully submits that at least in the context of the other recited elements of independent claim 12, the above-recited elements is not obvious or well known. M.P.E.P. § 2144.03(E) states that "[i]t is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based." Accordingly, in order to maintain the rejection, Applicant respectfully requests that the Examiner produce references in support of the Examiner's contention or, if the Examiner is relying upon personal knowledge to support the finding of what is known in the art, then the Examiner must provide an affidavit or declaration setting forth specific factual statements and explanations to support the finding. See, e.g., M.P.E.P. § 2144.03 and 37 C.F.R. § 1.104(d)(2).

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Without evidentiary support, it is respectfully submitted that the obviousness rejection of claims 12-18 cannot be maintained.

Claims 26-28

To the extent that the Office Action asserts, without any supporting evidence, that particular elements are well known or obvious as was made with respect to claims 12-18, Applicant respectfully challenges such unsupported assertions and respectfully submits that at least in the context of the other recited elements of independent claim 26, such elements are not obvious or well known. M.P.E.P. § 2144.03(E) states that "[i]t is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based." Accordingly, in order to maintain the rejection, Applicant respectfully requests that the Examiner produce references in support of the Examiner's contention or, if the Examiner is relying upon personal knowledge to support the finding of what is known in the art, then the Examiner must provide an affidavit or declaration setting forth specific factual statements and explanations to support the finding. See, e.g., M.P.E.P. § 2144.03 and 37 C.F.R. § 1.104(d)(2).

Applicant respectfully submits that Giallorenzi and Dutkiewicz teach away from each other. Claim 26 recites, for example, a DC tracking loop. Without any other teaching, Dutkiewicz does not teach that the DC Tracking Stage 23 is a DC tracking loop. FIG. 3 of Dutkiewicz might be alleged to be a loop (although Applicant is not admitting that such an alleged loop is a DC tracking loop as set forth in claim 26) from DC Off-Set Removal Stage 22 to Symbol Timing Recovery stage 25 to DC Tracking Stage 23 back to DC Off-Set Removal Stage 22. However, although using the Symbol Timing Recover Stage 25 is necessary to the Dutkiewicz invention, using the Symbol Timing Recovery Stage 25 or the inventive procedure of Dutkiewicz would conflict with the time offset procedure of Giallorenzi. The track-or-acquire method of timing recovery highlighted by Dutkiewicz is operationally very different from on-time, early and late accumulation of Giallorenzi as alleged in the Office Action. Each is *necessary* to the inventions of Dutkiewicz and Giallorenzi. However, the modification to either

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Dutkiewicz or Giallorenzi in favor of the timing aspect of the other's invention would necessarily change the principle of operation of either Dutkiewicz or Giallorenzi which is prohibited under M.P.E.P. § 2143.01 ("[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious").

It is therefore respectfully submitted that an obviousness rejection cannot be maintained when based on the combination of Giallorenzi and Dutkiewicz. For at least the above reasons, it is respectfully requested that the rejection be withdrawn with respect to claims 26-28.

In addition, claim 27 recites an initial estimation module disposed intermediate the analog-to-digital converter and the DC tracking loop. Without any other teaching, Dutkiewicz does not teach that the DC Tracking Stage 23 is a DC tracking loop. FIG. 3 of Dutkiewicz might be alleged to be a loop (although Applicant is not admitting that such an alleged loop is a DC tracking loop as set forth in claim 26) from DC Off-Set Removal Stage 22 to Symbol Timing Recovery stage 25 to DC Tracking Stage 23 back to DC Off-Set Removal Stage 22. However, there is no component between an alleged DC tracking loop 22, 25, 23 and A/D converter 21, except output line 31 which is not an initial estimation module.

For the above reasons, it is respectfully requested that the rejection be withdrawn with respect to claims 26-28.

## **VII. INHERENCY DOCTRINE**

Applicant respectfully notes that the Office Action has on occasion employed the inherency doctrine in support of a rejection.

Applicant would like to respectfully draw the attention of the Examiner to the following with respect to the doctrine of inherency.

A patent law treatise by Donald S. Chisum states that "Federal Circuit decisions emphasize that an anticipatory inherent feature or result must be consistent, necessary, and inevitable, not merely possible." Chisum on Patents § 3.03[2][b] (December 2004).

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The United States Court of Appeals for the Federal Circuit ("the Federal Circuit") has stated that "anticipation by inherent disclosure is appropriate only when the reference discloses prior art that must necessarily include the unstated limitation". *Transclean Corp. v. Bridgewood Services, Inc.*, 290 F.3d 1364, 1373, 62 U.S.P.Q. 2d 1865 (Fed. Cir. 2002).

The Federal Circuit has also stated that "[i]nherency does not embrace probabilities or possibilities" and that "[i]nherent anticipation requires that the missing descriptive material is 'necessarily present,' not merely probably or possibly present, in the prior art." *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1297, 63 U.S.P.Q. 2d 1597 (Fed. Cir. 2002).

Applicant respectfully submits that if the elements as set forth in the claims including the relationships recited therein are merely probable or possible present, but are not necessary always present, then the inherency doctrine should not apply.

#### **VIII. PATENTABLE SUBJECT MATTER**

Applicant gratefully acknowledges the indication by the Examiner that claim 4 includes patent subject matter. In view of the above, it is believed that claim 4 is in condition for allowance.